

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
22 September 2005 (22.09.2005)

PCT

(10) International Publication Number
WO 2005/088532 A1

(51) International Patent Classification⁷: **G06K 19/077**,
19/07, H01L 27/105

(21) International Application Number:
PCT/JP2005/004584

(22) International Filing Date: 9 March 2005 (09.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-068450 11 March 2004 (11.03.2004) JP

(71) Applicant (for all designated States except US): SEMI-
CONDUCTOR ENERGY LABORATORY CO., LTD.
[JP/JP]; 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **KOYAMA, Jun**
[JP/JP]; c/o SEMICONDUCTOR ENERGY LABORA-
TORY CO., LTD., 398, Hase, Atsugi-shi, Kanagawa,
2430036 (JP).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,
ZM, ZW.

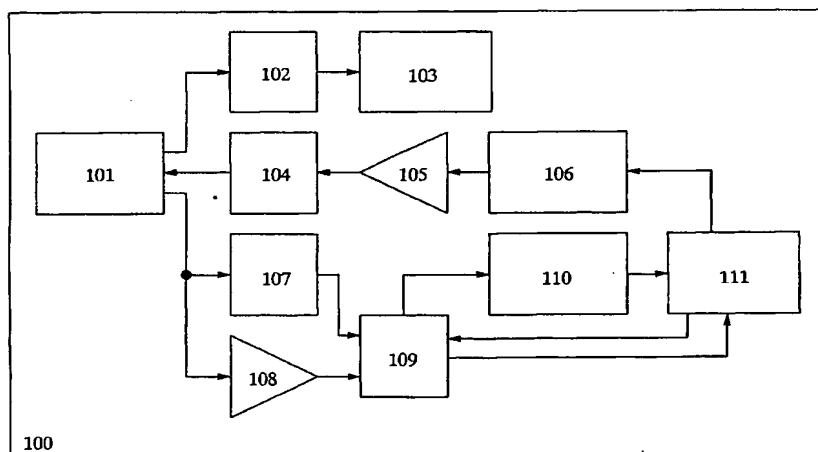
(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: SEMICONDUCTOR DEVICE, WIRELESS CHIP, IC CARD, IC TAG, TRANSPONDER, BILL, SECURITIES, PASS-
PORT, ELECTRONIC APPARATUS, BAG, AND GARMENT



(57) Abstract: The invention provides an ID chip to which data can be written only once in order to maintain high security as a non-contact type ID chip to which signals are inputted wirelessly from an antenna. A non-contact type ID chip includes a nonvolatile FeRAM in the chip. Data representative of whether data is written or not to the FeRAM is written when writing identification data, thereby data cannot be written additionally to the FeRAM of the ID chip once the data has been written.